

process for preparing a wafer by using a material such as silicon. Step 4 is a wafer process which is called a pre-process wherein by using the so prepared mask and wafer, circuits are practically formed on the wafer through lithography. Step 5 subsequent to this is an assembling step which is called a post-process wherein the wafer having been processed by step 4 is formed into semiconductor chips. This step includes an assembling (dicing and bonding) process and a packaging (chip sealing) process. Step 6 is an inspection step wherein an operation check, a durability check and so on for the semiconductor devices provided by step 5, are carried out. With these processes, semiconductor devices are completed and they are shipped (step 7).--.

IN THE CLAIMS:

Please cancel Claims 1-20 without prejudice to or disclaimer of their subject matter.

Please add Claims 21-33, as follows:

--21. (NEW) A scan type exposure for transferring a pattern onto a substrate by scan exposure, said apparatus comprising:
a stage for moving the substrate in a Y direction corresponding to a scan direction, and in an X direction intersecting the scan direction;
an alignment scope for performing measurement for alignment of the substrate, at a position spaced, in the Y direction, from a position where the exposure of the substrate is to be carried out;

an X measuring device for performing yaw measurement of said stage by use of an X reflection surface provided on said stage along the Y direction;

a Y measuring device for performing yaw measurement of said stage by use of a Y reflection surface provided on said stage along the X direction; and

a controller being operable to select yaw measurement information of said X measuring device for an alignment operation including the alignment measurement using said alignment scope, and being operable to select yaw measurement information of said Y measuring device for the scan exposure.

22. (NEW) An apparatus according to Claim 21, wherein said X measuring device includes (i) an X-direction interferometer for measuring a position of said stage in the X direction and (ii) an X yaw interferometer cooperating with said X-direction interferometer to measure yawing of said stage, and said Y measuring device includes (i) a Y-direction interferometer for measuring a position of said stage in the Y direction and (ii) a Y yaw interferometer cooperating with said Y-direction interferometer to measuring yawing of said stage.

23. (NEW) An apparatus according to Claim 22, wherein said X-direction interferometer and said X yaw interferometer are arranged to use a light beam reflected by said X reflection surface, and said Y-direction interferometer and said Y yaw interferometer are arranged to use a light beam reflected by said X reflection surface.

24. (NEW) An apparatus according to Claim 23, wherein, in the scan exposure, said controller performs position control of said stage, on the basis of said Y-direction interferometer, said Y yaw interferometer, and said X-direction interferometer.

25. (NEW) An apparatus according to Claim 21, wherein said controller is operable, in accordance with an operation state of said exposure apparatus, including an alignment operation and a scan exposure operation, to perform an averaging processing or a statistical processing to measurement data obtained by said X measuring device and said Y measuring device.

26. (NEW) An apparatus according to Claim 21, wherein said controller is operable to perform yaw measurement using said X measuring device, when said stage is to be moved after the alignment measurement using said alignment scope.

27. (NEW) A scan type exposure apparatus for transferring a pattern onto a substrate by scan exposure, said apparatus comprising:

a stage for moving the substrate in a Y direction corresponding to a scan direction, and in an X direction intersecting the scan direction;

an alignment scope for performing measurement for alignment of the substrate, at a position spaced, in the X direction, from a position where the exposure of the substrate is to be carried out;

a Y measuring device for performing yaw measurement of said stage by use of a Y reflection surface provided on said stage along the X direction, said Y measuring device including (i) a Y-direction interferometer for measuring a position of said stage in the Y direction, and (ii) a Y yaw interferometer being cooperable with said Y-direction interferometer to measure yawing of said stage; and

a controller being operable to select yaw measurement information of said Y measuring device, both for an alignment measurement using said alignment scope and for the scan exposure operation.

28. (NEW) An apparatus according to claim 27, further comprising an X measuring device for performing yaw measurement of said stage by use of an X reflection surface provided on said stage along the Y direction, wherein said X measuring device includes (i) an X-direction interferometer for measuring a position of said stage in the X direction and (ii) an X yaw interferometer being cooperable with said X-direction interferometer to measure yawing of said stage.

29. (NEW) An apparatus according to Claim 28, wherein said X-direction interferometer and said X yaw interferometer are arranged to use a light beam reflected by said X reflection surface, and said Y-direction interferometer and said Y yaw interferometer are arranged to use a light beam reflected by said Y reflection surface.

30. (NEW) A scanning exposure method for transferring a pattern onto a substrate by scan exposure, said method comprising the steps of:

moving a stage to move the substrate in a Y direction corresponding to a scan direction, and in an X direction intersecting the scan direction;

performing, through an X measuring device, yaw measurement of the stage using an X reflection surface provided on the stage along the Y direction;

performing, through a Y measuring device, yaw measurement of the stage using a Y reflection surface provided on the stage along the X direction; and

selecting yaw measurement information of the X measuring device for an alignment operation including the alignment measurement of the substrate using the alignment scope; and

selecting yaw measurement information of the Y measuring device for the scan exposure.

31. (NEW) A method according to Claim 30, wherein, in accordance with an operation state of an exposure apparatus including an alignment operation and a scan exposure operation, an averaging processing or a statistical processing is performed to measurement data obtained by the X and Y measuring devices.

32. (NEW) A method according to Claim 30, wherein the yaw measurement using the X measuring device is performed when the stage is to be moved after the alignment measurement using the alignment scope.

33. (NEW) A device manufacturing method, comprising the steps of:
coating a substrate with a resist, the substrate to be scanningly exposed with a
pattern;
moving a stage to move the substrate in a Y direction corresponding to a scan
direction, and in an X direction intersecting the scan direction;
performing, through an X measuring device, yaw measurement of the stage
using an X reflection surface provided on the stage along the Y direction;
performing, through a Y measuring device, yaw measurement of the stage
using a Y reflection surface provided on the stage along the X direction;
selecting yaw measurement information of the X measuring device for an
alignment operation including alignment measurement of the substrate to be carried out by use of
an alignment scope and at a position spaced, in the X direction, from a position where the
exposure of the substrate is to be performed;
selecting yaw measurement information of the Y measuring device for the scan
exposure; and
developing the resist after the scan exposure.--.

REMARKS

Applicants request favorable reconsideration and allowance of the subject
application in view of the preceding amendments and the following remarks.